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A REVIEW OF LITERATURE ON APPLICATION OF HEDONIC PRICE MODEL ON RESIDENTIAL PROPERTY VALUE IN NIGERIA

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ABSTRACT

The real estate market has long been influenced by a variety of factors, including location, amenities, and physical characteristics making property valuation a complex and multifaceted process. The Hedonic Pricing Model (HPM) has emerged as a powerful tool in assessing property values by considering the different attributes that contribute to market prices. This study examines previous literatures on application of HPM in the assessment of property value; by examining numerous studies, this study examined the theoretical aspects of the HPM specifications, explored potential commonalities in their application in different countries and providing insights into the model's versatility and adaptability in a range of market scenarios. The purpose of the study is to harmonize the current literature on field of research, hence helping more understanding of Hedonic Pricing Model (HPM) as an appraisal model. This is because the concept of Hedonic Pricing Model (HPM) has attracted much attention in recent years. The study is conducted with reference to existing theoretical literature, published and unpublished research. The study is mainly a literature review/survey on the implementation of HPM in the assessment of property value. The literature review found that value of residential property is positively correlated with structural attributes including lot dimensions, living space, quality of the external and interior construction, number of spaces, bathrooms, and bedrooms. Based on studies reviewed, Hedonic Price Model proves to be adaptable across diverse real estate markets worldwide, but its effectiveness varies depending on local market conditions, which means its application needs to be tailored to specific regional contexts. Given the versatility of the Hedonic Pricing Model (HPM) in various market scenarios, it is recommended that future studies explore the integration of newer data sources, such as big data and machine learning techniques, to enhance the accuracy and predictive power of HPM.

Incorporating these technologies can help capture more nuanced and dynamic property value determinants, improving the model's application in real-time market conditions.
Key words: Residential Property, Value, Hedonic Price Model (HPM), Nigeria.

1.0 INTRODUCTION

Housing is a composite commodity made up of different physical characteristics as well as locational and neighbourhood attributes. Unfortunately, the housing commodity is sold as a whole and these physical characteristics and neighbourhood attributes are not traded explicitly (Mesthrige& Poon, 2015). The hedonic pricing model is an important scientific tool used in the empirical research of different aspects of housing markets (Chin and Chau, 2003) which theoretical foundation is embedded in Lancaster's (1966) consumer utility theory and Rosen's (1974) model of product differential. These products or goods are priced based on the beneficial attributes or characteristics they possess (Rosen 1974). Though Lancaster's and Rosen's models infer that products have numerous attributes that combine to form bundles of qualities valued by the consumers, they have fundamental differences; for instance, Lancaster's method is more apposite to consumer goods, while Rosen's technique which has become the generally accepted paradigm of the hedonic method is adequate for durable goods such as housing (Hulten, 2003; Chin and Chau, 2003).

The hedonic pricing technique is used as a tool to reveal the implicit prices of these attributes (Sirmans, et al. 2008). The hedonic pricing model is based on the premise that the price/value of a good is determined by the utility that the various attributes of the particular product bears. When the property values are regressed on the various housing attributes, the empirical magnitudes of the coefficients of the various attributes constitute the hedonic prices of the various characteristics (Rosen, 1974; Fan et al., 2006; Wilhelmsson, 2009). The willingness to pay for the attributes, therefore, determines the price of the property (Owusu-Ansah, 2012).

One advantage the hedonic pricing model has in assessing property values for especially Rating purposes is that it considers both the value of the building itself and the land on which the property is located by retrieving the implicit prices of the various housing and locational attributes from a pool of already transacted/valued properties. In this way, while methods like the replacement cost method ignore the value of the land on which the property is situated and concentrate on only the cost of replacing the building, the hedonic pricing model efficiently determine the contribution of the various housing attributes including the physical land to the value of the property and hence the amount to impose on a property as a tax (Sirmans, et al. 2005). One area in which the hedonic pricing model has been beneficial to researchers, practitioners and policy makers in the housing market is the area of assessing the value of properties, especially for rating purposes. Estimating or assessing the value of properties have traditionally focused on the use of conventional valuation methods like the comparable method, the income/investment method, the profit method, the residual/development method, and the contractor's/cost method. However, the use of the hedonic pricing model in assessing property values is now very common in most developed countries. The

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hedonic pricing model is indeed considered as one of the advanced valuation methods in today's valuation practice (Pagourtzi et al., 2003).

Despite the widely used of the hedonic pricing model, some studies have documented some problems of the model to include omitted variable bias, multicollinearity, heteroskedasticity, choice of functional form etc (see for example; Abdulai and Owusu-Ansah, 2010; Fan et al., 2006; Malpezzi, 2003; Sheppard, 1999). The literature clearly indicates that the Hedonic Pricing Model (HPM) has been widely applied in various contexts to estimate residential property values, with many studies assessing factors like location, property size, amenities, and environmental characteristics. Some of these studies, such as those by Abdulai and Owusu-Ansah (2010), Fan et al. (2006), and Sheppard (1999), acknowledge challenges such as omitted variable bias, multicollinearity, and heteroskedasticity. Furthermore, the limitations of the model are compounded when the housing market is not in equilibrium, as shown by Riddel (2001), whose study on Boulder, Colorado, suggested that market imperfections could lead to an underestimation of the premium placed on certain attributes like open space.

In Nigeria, previous studies (Abidoye & Chan, 2018; Abidoye & Chan, 2021) have highlighted that while the HPM has been applied, its full potential has not been realized. Abidoye and Chan (2021) further emphasized that while structural attributes were considered, significant locational, neighborhood, and macroeconomic variables were left underexplored. This creates an evident gap in understanding the full array of factors influencing residential property values in the Nigerian context, especially in terms of temporal variations and equilibrium issues in property markets.

The existing studies in Nigeria, especially by Abidoye and Chan, have not fully addressed the dynamic nature of housing markets, particularly the temporal lag in price adjustments. As shown in studies like Riddel's (2001), which discussed the time lag between environmental changes and the incorporation of those changes into housing prices, there is a need to consider how housing markets in Nigeria may take time to reflect the impact of neighborhood improvements, such as infrastructure upgrades and new amenities. The rapid urbanization and the influx of people into cities across Nigeria make it particularly important to understand how such temporal aspects influence property values.

Given the evolving nature of real estate markets, it's critical to fill the time gap and update the application of the HPM in Nigeria, exploring how changes over time influence housing prices. Although the Hedonic Pricing Model has been used extensively globally to analyze property values, there is a knowledge gap in terms of the specific challenges of applying the model to Nigerian residential properties. The gap in literature primarily revolves around two key areas: Many Nigerian studies, like those by Abidoye and Chan (2018), focus mainly on structural attributes and amenities, while neglecting key factors such as location, proximity to services, neighborhood dynamics, and macroeconomic conditions. These factors are vital for understanding Nigeria's real estate market. A more comprehensive approach is needed to capture the full range of influences on property values. Hence, the need for this very study

By identifying the full range of factors (including location, neighborhood, structural, and macroeconomic variables) influencing property values, the study can help inform policymakers in Nigeria about the critical levers for urban development, zoning regulations, and housing policies. This can lead to more effective policy interventions that promote sustainable growth and development in urban areas.

Understanding the dynamics of property value changes over time considering market imperfections, temporal lags, and the impact of environmental and infrastructure improvements will allow stakeholders, including real estate developers, investors, and homeowners, to make better-informed decisions. This can also help mitigate the risks of overvaluing or undervaluing properties. This study will contribute to bridging the knowledge and data gaps in the application of the HPM in Nigeria. Given the limitations observed in previous studies, it is essential to create more comprehensive and localized data sources to enhance the accuracy of real estate value estimations in Nigeria. More importantly, Nigeria's rapidly urbanizing population and developing housing market provide a unique case for testing the applicability and effectiveness of the Hedonic Pricing Model. This research could help extend the model's application to countries with similar socio-economic challenges, providing insights for other developing nations.

2.0 LITERATURE REVIEW

2.1 THEORETICAL BASIS OF HEDONIC PRICING MODEL

Housing is commonly accepted as the most basic human need, right behind food and clothing. All forms of housing go beyond simply providing a place to sleep because they come with all the facilities and social services that improve people's quality of life, make a neighborhood or community enjoyable, and are a vital source of revenue for any nation (Sakariyau, Muhammad, Bello, Aliyu, & AbdulRazak, 2023; Sakariyau & Mendie, 2023: Jamiu & Mendie, 2023). Residential property rental prices are influenced by building attributes related to neighborhood, location, and dwelling attributes (Sani, Mohammed & Usman, 2023). It is a complex good consisting of numerous components, including the buildings that comprise the physical attributes of the dwelling, access, and facilities that comprise a collection of housing-related services, as well as surrounding attributes that comprise the neighborhood and society at large (Sani, et al., 2023). The term "hedonic" was originally used by Court (1939) to assess the hedonic price indicator of automobiles. Hedonic Price Models (HPM) was initially shown with the evaluation of farmland by Haas (1922) and Wallace (1926). Using data on car sales prices and semi-logarithmic shapes, he created complex valuation models. Based on the theory of consumption, Lancaster (1966) argues that the features of a diverse product, such as real estate, determine the consumer benefit; these advantages are grouped into clusters, from which the customer can select and combine some to obtain the maximum benefit. This suggests that this hypothesis applies well to consumer items. developed the concept of a good's utility by valuing its unique qualities, keeping in mind that there is a linear relationship. According to Rosen's (1974) estimate that properties are changeable and that the total value is produced by summing the values of each property feature, hedonic pricing models should be nonlinear. Rosen extrapolated that the advantages consist of a collection of

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characteristics that are selected by a combination of customer preferences and are inseparable variables.

2.2 EMPIRICAL ISSUES ON HEDONIC MODEL APPLICATION

The fact that the hedonic price models (HPM) usage is dependent on the assumption that the market functions flawlessly, that there are numerous buyers and sellers, each of whom independently influences supply and demand, and that information is dispersed asymmetrically are some of its limitations (Uwaezuoke, Sani, Igoche, Akaehomhen & Sakariyau, 2022). But this is an unlikely scenario. A key component of the hedonic specification model is sample selection. Usman, Lizam, and Adekunle (2020) state that the size of the segment is the main source of difference in hedonic price forecasting; the more homogeneous the segment, the smaller it is, but the prediction error rises, and sample size and standard errors are negatively correlated. There is discussion of the following empirical concerns:

2.2.1 Market segmentation - A set of characteristics that serve as advantageous group substitutes but not as replacements for products from other submarkets are referred to as market segments. Property market segments are described by Ciuna, Milazzo, and Salvo (2017) as locations where specific dwelling types are offered for purchase and the real value per unit is constant. According to Keskin and Watkins (2017), typical residential segments are determined by the kind of property, socioeconomic variables, location, limits of local governments, or market areas acknowledged by real estate brokers. Determining the real characteristics that enable improved market segmentation and how the differences between groups may be found and evaluated are crucial questions to answer when addressing the categorization problem (Ciuna, Milazzo, & Salvo, 2017). Based on criteria for the quality of public schools, Fell, (2019) identified 18 market segments in the Dallas metropolitan region, which were subsequently divided into five main sectors. A hedonic pricing model and a method that divides submarket elements into housing feature variables of a hedonic real price model were used to identify housing submarkets. The study created the idea of hierarchical linear modeling, which uses the interaction of submarket variables, community features, and dwelling attributes to determine house values. The main problem with cluster stratification procedures that are based on racial divides, property types, local government, or school districts, according to the authors, is that they are imposed rather than modeled. According to Royuela and Duque (2012), market segmentation is necessary as long as carriers appear to be very different for each segment, and thus, the growth of property market segments requires the establishment of an allocation criterion that optimizes the differences between hedonic parameter vectors. This suggests that the assessed section determines how the hedonic qualities fluctuate. They verified that the House model outperforms the administrative part of the city model, principally attributing this advantage to the integration of several pertinent explanatory factors into the Hedonic Price Model (HPM). Four distinct strategies were used to establish Dallas submarkets. Wang, Zhang, and Zhao (2023) examined the relationship between geographical variation and housing feature value in the Tucson, Arizona property market using geographic distribution and regional weighted regression. They argued that because the marginal value of homes fluctuates spatially, the Hedonic Price Model (HPM) is inappropriate for use in large marketplaces.

2.2.2 Specification of variables - One crucial issue that comes up throughout the Hedonic Price Model (HPM) design process is the number of variables that make up the model. A large number of inappropriate patterns included in the model often lead to its degradation. The model determines

an appropriate number of variables after assessing the environment and the data that are currently accessible (Galelli, et al., 2014). The accuracy of the extended model was enhanced by the addition of more characteristics (Thanasi, 2015). the issue of model misspecification brought on by the inclusion of a large number of independent variables, which is avoidable by choosing an even sample of data. in the Hedonic Price Model (HPM), the incomparability of different factors' effects on property value is a controversial problem because variable parameters can be categorical or numerical in different studies. (2015, Thanasi). The accessibility of the data has an impact on this too. The challenges arising from the use of inaccurate data, variable measurement, and the incapacity to rectify variable faults underpin the use of the Hedonic Price Model (HPM). The impact of a neighborhood can be characterized in a Hedonic Price Model (HPM) as a key component that determines the price or anticipated prices vary in different places according to neighborhood features, according to Dong, Wolf, Alexiou, and Arribas-Bel (2019). Geographical effects produced four different types and degrees of externalities, which led to different specifications for hedonic pricing models. The findings demonstrated that both the expanded spatial an autoregressive model and the conventional hedonic autoregressive model outperformed the traditional model in both theory and practice. This was because the latter represented spatial heterogeneity and adjacency with other nearby buildings, which illustrated the provided shifts in the price of real estate determination process. The adverse impact of variable multicollinearity on real estate price estimations is a subject of discussion in the context of implementing the Hedonic Price Model (HPM). The rationale of the data is made more difficult by the substantial correlation of several variables (Thanasi, 2015). The combined index established a strong correlation between the level of public services provided and the overall macroeconomic growth of the neighborhoods, which helped to offset the study's limitation caused by the absence of variables reflecting public services in the framework.

3.0 **RESEARCH METHODOLOGY**

This study was carried out with particular emphasis on existing and current conceptual and theoretical body of knowledge and published in addition to unpublished previous studies. The study reviewed and analysed literature on application of hedonic price model of residential properties on capital and rental value with the sole purpose of harmonize the current literature on field of research, hence helping more understanding of Hedonic Pricing Model (HPM) as an appraisal model. as this has concept of Hedonic Pricing Model (HPM) has attracted much attention in recent years. At the end of the search exercise, articles were eventually retrieved and thus, subjected to analysis. Out of these, are journal articles, while only are conference proceedings.

4. VARIABLES OF HEDONIC PRICING MODEL

Due to their heterogeneity nature, real properties are different from a collection of attributes that determine the property value using the hedonic function (Bishop et al., 2020). The neighborhood and structural qualities vector influence the property's sale price (Ding, Choo, Ng, & Ng, 2020). Wu et al. (2016) divided the components of the Hedonic Price Model (HPM) into three groups: Neighborhood characteristics, geographic characteristics, and structural characteristics

4.1 Structural Characteristics

When applying the Hedonic Price Model to real estate, physical characteristics have a significant effect on the value (HPM). These models incorporate both qualitative and quantitative information, such as the presence of a fireplace, the number of floors, the size of the home, the number of rooms,

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bathrooms, and bedrooms, as well as the exterior structure's structural integrity. Other qualitative information includes the presence of a garage, a garden area, warming and water systems, and other features. Various authors have examined the connection between structural attributes and home value; the following explains their conclusions:

4.1.1 Space: Zahirovich-Herbert and Gibler (2014) state that a property's value increases by 5% for each additional unit. Thanasi (2015) found that the price of a property is expected to decrease by 4.8% for lots smaller than or equal to 0.5 acres, but to increase by 3.10% for lots larger than or equal to 1 acre. Sairanen (2020) found that an apartment's value increases by 13.02% when one square meter of living space is added. Ayan and Erkin (2014) found that the factor with the greatest explanatory power in the Hedonic Price Model (HPM) was living space, accounting for 61% of the mean price variation. Ayan and Erkin (2014) found that the price of a space increases by 0.84% for spaces larger than 80 m2, but only by 0.26% for spaces up to 200 m2.

4.1.2 Number of floors: Ayan and Erkin (2014) discovered that the price of an apartment on the ground floor was predicted to be 8.4% lower than that of an apartment on the upper levels of the same structure. Apartments below the ground floor were found to be abrogated by 23%. Purnami (2021) found that the amount of residential floors was an important beneficial parameter in the Penang area, suggesting that buyers choose flats on higher floors, which are said to have a more effectively view, less noise, and cleaner air. Takáts (2012) discovered a negative correlation between age and home value; Lopez and Yoshida (2022) found that the price of an apartment decreased by 0.24%; Haurin et al. (2016) found that the relationship between residence value and age forms a U-shape curve, because many older houses may command a premium because of their historic character and prevalence in particular neighborhoods. The dwelling price fell by 0.04% when the age raised by one unit.200 m2.

The quantity of bedrooms and bathrooms - Chi et al. (2021) developed a Hedonic Price Model (HPM) utilizing structural feature data from 563 residential properties sold in the metropolitan zone of Franklin, Colombia. She found that the addition of a toilet would increase the home's value by $7,706. Lisi and Iakobini (2013) assert that the addition of a bedroom enhances a home's worth by 4.57%, whereas the inclusion of a toilet elevates the value by 10.23%. Zsoy and Ahin (2022) established that the addition of a toilet increased property value by 11.67%, while the inclusion of an extra bedroom in Helsinki led to a 4.8% rise in price-log, assuming all other factors remained constant.

4.1.3 The Structural quality: The influence of structural quality on its value varies across different studies. Cui et al. (2018) found that the increased quality of the house primary building resulted in a 14% rise in price. Zsoy and Ahin (2022) demonstrated through their empirical model that, ceteris paribus, brick building is valued at a 24% premium, while stucco structure is anticipated to be valued at 34-35% higher. Ayan and Erkin (2014) found that substandard apartment quality correlates with a 10 percent reduction in average pricing.

4.1.4 Existence of Garage, basement, fireplace, pool, and air conditioning: The value of a property increases by 6.09% when a basement is present, and by 11.7% when a garage is present, according to Lisi and Iakobini (2013). Teoh, Yau, Ong, and Connie (2023) found that the value of a property increased by 6-12% over the course of the period if it had a garage and a fireplace, and by 12-16% if it had a basement. The existence of a pool enhanced value dependent on the local climate, as Teoh et al. (2023) showed. A home's value increased by 9.72% when central air conditioning was installed (Lisi and Iakobini, 2013).

4.2 Geographical characteristics

The property's location, separation from the main business district, and ease of access to nearby centers all contributed to its 9% increase in value. Because the property was situated among two blocks of apartment buildings with over four rental units, its value was diminished by 5%, and because it was on one of Savannah's six main streets, its price was decreased by 7%. These results were explained by the hypothesis that the proximity of an apartment building depresses property values since the neighborhood is thought to be an area with noisy, traffic-filled roads. The model did not identify the property's placement at the junction as an explanatory variable. Many authors use the number of miles as a hedonic pricing model indicator (Soler & Gemar, 2018; Sairanen, 2020; Yusuf, Muhammad, Otunola & Kayode, 2021). Ciuna et al. (2017) came to the conclusion that while distance from the business center did not significantly effect property value, distance from sub-centers did. Ayan and Erkin (2014) found that the property's distance from Izmit's business district was insignificant, as an increase of 5 kilometers resulted in a 5% decrease in cost. Using a hedonic pricing model on Indianapolis, Litman (2015) found that a 10 minute increase in commute time was accompanied by a 3.3% to 6.4% decline in home sales price. It was found that the travel distance to work locations had a greater impact on the selling price. There were price reductions of 9.1% and 12.9% for distances of ten miles or ten minutes to the therapies, respectively. They found that the impact of commuting traffic is greater than the distance of a property from the city's business hub. One aspect of the property that affects its value qualitatively is the view or surrounding landscape. Theoretically, a positive green view increases the value that buyers place on the home. Climate was found by Sussman et al. (2014) to be a significant effect in variations in home values.

4.3 Characteristics of the Neighborhood

Factors related to a neighborhood's social and physical characteristics indicate the quality of life in the neighborhood and influence property values. Thanasi (2015) found that a house in a high-quality neighborhood could be worth 38% more than a house in a poor-quality neighborhood. The model indicates the level of crime as a key variable. Ceccato and Wilhelmsson (2011) observed that each one percentage point rise in total violent crime in Stockholm lowers apartment values by 0.04 cents. In more detail, if "theft of apartments" as a single crime increased by 1%, apartment values were expected to fall by 0.21 cents on average. Because the northern area of the city contained the most apartments, the impact of the price decline was greater there. The study discovered that the price of flats was influenced not only by the level of criminality in the neighborhood where the residence was located, but also by the level of crime in nearby districts, regardless of the type of crime. In terms of educational features, Ayan and Erkin (2014) discovered that being close to an excellent public school increased the asset price by 16.3%. The concept of proximity was devised for flats located one kilometer from public educational institutions, hence inflating the district's average variable influence. Indeed, apartments located over a kilometer from public schools but in the same neighborhood were valued lower due to the additional cost of taking children to school. Noise exposure is viewed as an important component in determining the worth of a residence. Lefèvre et al. (2020) evaluated the inverse relationship between airport noise exposure and house value. For exposure levels up to 75 decibels, the property price loss in the United States was 0.5% - 0.6% per decibel increase, whereas in Canada it was 0.8% - 0.9% per decibel increase. When all other factors are constant, a property treated to 55 decibels of noise will sell for 10-12% less than a property subjected to 75 decibels. In addition to the factors listed above, more variables of explanatory significance in the hedonic price model have been identified. Eom, Bae, and Kim (2017) identified property taxes in the area as an area variable, but Thanasi (2015)

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incorporated annual property tax, divided by the amount of property sales, into the Hedonic Price Model (HPM). The actual tax rate reduced the property's value by 23.76 percent. This wide volatility in the variable could be explained by the fact that Indiana's property taxation system, which was adopted in 1999, did not calculate property taxes based on real market value. Gambo (2012) found that the manner of property sale was a significant explanatory variable in the log-linear Hedonic Price Model (HPM) for rural Alaskans. Sales of a 2.12-acre property via online auction led to a sale at a price of $65,553, whereas sales via direct approach result in a lower price. R. Larsen (2023) identified season time as a cause for variation in house sales prices.

Major Findings and Lessons Learned from Previous Studies

1. **Structural Characteristics:**

Space and Size: Larger properties generally increase in value. Studies by Zahirovich-Herbert and Gibler (2014) and Ayan and Erkin (2014) showed that living space had a significant impact, with value increasing for larger lots and homes.

Number of Floors: Higher floors and certain positioning within a building also influence property prices. Ayan and Erkin (2014) found that ground-floor apartments had lower prices, while higher floors commanded a premium, especially due to better views and reduced noise levels.

Bedrooms and Bathrooms: Adding bedrooms or bathrooms positively affected property value, with Chi et al. (2021) and Lisi & Iakobini (2013) demonstrating the strong correlation between the number of rooms and increased prices.

Structural Quality: Higher construction quality leads to higher property values. For instance, brick and stucco buildings can be valued significantly higher, while poor structural quality can lead to price reductions (Ayan and Erkin, 2014; Zsoy and Ahin, 2022).

Additional Features: Amenities such as garages, basements, and pools enhance property value. For example, the presence of a garage or basement can increase property value by over 6%, while pools and air conditioning can also significantly boost property value depending on climate and market.

2. **Geographical Characteristics:**

Location: Proximity to major business centers plays a critical role in determining property values, with properties further away often losing value. Studies like Litman (2015) found that increased commute time reduced home prices by up to 6.4%.

View and Environment: A green or scenic view generally adds value to a property. Climate also plays a significant role in home value, as identified by Sussman et al. (2014).

Neighborhood Influence: Neighborhood characteristics such as proximity to sub-centers and the general social environment affect property prices. A property near high-quality schools, for instance, was found to be more valuable (Ayan and Erkin, 2014).

3. **Neighborhood Characteristics:**

Crime Levels: Areas with high crime rates typically see a decrease in property values. Studies by Ceccato and Wilhelmsson (2011) demonstrated how increased violent crime negatively impacted apartment prices.

Education: Proximity to good public schools significantly raised property values, with Ayan and Erkin (2014) finding that properties near top-tier educational institutions were valued higher.

Noise: Noise pollution, especially from sources like airports, can significantly lower property values. Lefèvre et al. (2020) showed that properties exposed to higher decibel levels could experience price drops of up to 12%.

4. **Other Influential Factors:**

Taxes and Seasonality: The presence of high property taxes can lower home values, as demonstrated by Thanasi (2015). Additionally, seasonality also plays a role in determining property prices, with sales prices varying depending on the time of year (Larsen, 2023).

Sale Method: The way a property is sold can also influence its price, with auction sales often resulting in higher prices than traditional direct sales (Gambo, 2012).

5.0 CONCLUSION

The Hedonic Pricing Model (HPM) provides a robust framework for assessing residential property values by examining the interplay of structural, geographical, and neighborhood attributes. Previous studies have consistently highlighted how key factors such as property size, location, and available amenities influence property prices. However, challenges related to market segmentation and variable specification have underscored the complexity of applying the model in real-world contexts, particularly within diverse or large-scale property markets. Despite its utility in analyzing residential value, HPM is not without its limitations. Issues such as data accuracy, market imperfections, and inadequate model design suggest opportunities for improvement, particularly in terms of real estate market classification, choosing appropriate functional forms, and refining variable specification. In practice, when Hedonic Pricing Model (HPM) is applied to specific markets, it tends to yield more accurate outcomes compared to broader, generalized applications. Establishing clear market segmentation criteria and using objective methods to model housing market categories. Additionally, selecting a functional form that best suits the particular market dynamics is essential to optimize the model's performance. The inclusion of property attributes, such as lot dimensions, living space, construction quality, and the number of rooms and bathrooms, is fundamental in determining property value. Furthermore, the location's proximity to essential services, including business and operation centers, significantly impacts property value. A positive correlation has been established between access to public education and property value, while negative correlations exist between factors like crime, racial diversity, and noise levels in the neighborhood. In conclusion, for the Nigerian real estate sector to evolve, it is crucial to bridge the gap between theoretical frameworks and their practical application, particularly in property value. The findings of this study contribute valuable insights into the current understanding of the Hedonic Price Model (HPM) and its use in real estate valuation within Nigeria. Moving forward, collaboration with real estate professionals and further research into market-specific applications will be key to advancing the field and enhancing the accuracy of property valuation techniques.

Recommendation:

Future studies should focus on refining the specification of variables, particularly in heterogeneous property markets, to reduce model misspecification. It is crucial to incorporate a wider array of externalities, such as environmental factors and macroeconomic conditions, to better capture the dynamics influencing property values. Additionally, enhancing market segmentation by considering local government policies and socioeconomic conditions will improve model precision. Furthermore, adopting advanced computational

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techniques like spatial autoregressive models could address geographical variations and improve the robustness of HPM in predicting real estate prices.

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